WHAT IS CLAIMED IS:

1. A communication system for remotely controlling a vehicle, the communication system comprising:

a portable transmitting apparatus, provided with a plurality of operation switches for remotely controlling components employed in the vehicle, for transmitting operation information representing an operation state of any specific one of the operation switches as a radio wave when any specific one of the specific operation switches is operated; and

a receiving apparatus, mounted on the vehicle, for receiving operation information transmitted by the transmitting apparatus and outputting the received operation information to a control apparatus employed in the vehicle as a command for controlling the vehicle,

wherein the transmitting apparatus is constructed to

transmit, when an operation is carried out on any specific one of the operation switches, a radio wave conveying switch information representing the type of the specific operation switch operated this time as the operation information till an end of the operation carried out on the specific operation switch, and

transmit, if an operation is carried out again on any particular one of the operation switches before a predetermined period of time lapses since the end of the operation carried out on the specific operation switch, a radio wave conveying switch information representing the type of

the particular operation switch operated this time and previous switch information, which was transmitted previously when the specific operation switch was operated, till an end of the operation carried out on the particular operation switch.

2. A communication system for remotely controlling a vehicle, the communication system comprising:

a portable transmitting apparatus, provided with a plurality of operation switches for remotely controlling components employed in the vehicle, for transmitting operation information representing an operation state of any specific one of the operation switches as a radio wave when the specific operation switch is operated; and

a receiving apparatus, mounted on the vehicle, for receiving operation information transmitted by the transmitting apparatus and for outputting the received operation information to a control apparatus employed in the vehicle as a command for controlling the vehicle,

wherein the transmitting apparatus is constructed to transmit, when an operation is carried out on any specific one of the operation switches, a radio wave, which conveys switch information representing the type of the operated specific operation switch and operation duration information indicating the duration of a continuous operation carried out on the operated specific operation switch, as the operation information till an end of the operation carried out on the

specific operation switch.

3. A communication system for remotely controlling a vehicle as in claim 2,

wherein the transmitting apparatus is constructed to transmit, if an operation is carried out again on any particular one of the operation switches before a predetermined period of time lapses since the end of the operation carried out on the specific operation switch, switch information representing the type of the particular operation switch operated this time, operation duration information indicating the duration of a continuous operation carried out on the operated particular operation switch and previous operation information, which was transmitted previously when the specific operation switch was operated, or switch information included in the previous operation information as a radio wave till an end of the operation carried out on the particular operation switch.

4. A communication system for remotely controlling a vehicle as in claim 1,

wherein the receiving apparatus is constructed to output, when specific reception of the operation information is started, the received operation information to the control apparatus employed in the vehicle as the command till an end of the specific reception of the operation information, and

output, if other reception of the operation information is started before a predetermined period of time lapses since the end of the specific reception of the operation information, the operation information received in the other reception to the control apparatus employed in the vehicle as the command till an end of the other reception of the operation information.

5. A communication system for remotely controlling a vehicle as in claim 2,

wherein, the receiving apparatus is constructed to output, when specific reception of the operation information is started, the received operation information and reception duration information representing a reception duration in a period of the specific reception of the operation information to the control apparatus employed in the vehicle as the command till an end of the specific reception of the operation information.

6. A communication system for remotely controlling a vehicle as in claim 3,

wherein the receiving apparatus is constructed to

output, when specific reception of the operation information is started, the received operation information and reception duration information representing a reception duration in a period of the specific reception of the operation information to the control apparatus employed in the vehicle

as the command till an end of the specific reception of the operation information, and

output, if other reception of the operation information is started before a predetermined period of time lapses since the end of the specific reception of the operation information, the operation information received in the other transmitting and receiving duration information representing a reception duration in a period of the other reception of the operation information to the control apparatus employed in the vehicle as the command till an end of the other reception of the operation information.

7. A portable transmitting apparatus comprising:

a plurality of operation switches for remotely controlling components employed in a vehicle;

a transmission means for transmitting operation information representing an operation state of any specific one of the operation switches as a radio wave when the specific operation switch is operated;

an operation determination means for determining whether a predetermined period of time has lapsed since an end of an operation previously carried out on any of the operation switches when an operation is carried out this time on a particular one of the operation switches;

a first transmission control means for letting switch information indicating the type of the particular operation switch operated this time be transmitted as the operation

information from the transmitting apparatus till an end of the operation carried out this time on the particular operation switch after the operation determination means determines that the predetermined period of time has lapsed since the end of the operation previously carried out on any of the operation switches; and

a second transmission control means for letting switch information indicating the type of the particular operation switch operated this time and switch information transmitted in the operation previously carried out on any of the operation switches be transmitted as the operation information from the transmitting apparatus till an end of the operation carried out this time on the particular operation switch after the operation determination means determines that the predetermined period of time has not lapsed since the end of the operation previously carried out on any of the operation switches.

8. A portable transmitting apparatus comprising:

a plurality of operation switches for remotely controlling components employed in a vehicle;

a transmission means for transmitting operation information representing an operation state of any specific one of the operation switches as a radio wave; and

a first transmission control means for letting switch information indicating the type of the specific operation switch operated this time and operation duration information

representing the duration of a continuous operation carried out on the specific operation switch be transmitted as the operation information from the transmitting apparatus after the continuous operation carried out on the specific operation switch is started till an end of the operation.

9. A portable transmitting apparatus as in claim 8, further comprising:

an operation determination means for determining whether a predetermined period of time has lapsed since an end of an operation previously carried out on any of the operation switches when an operation is carried out this time on a particular one of the operation switches; and

a second transmission control means for letting switch information indicating the type of the particular operation switch operated this time, operation duration information representing the duration of a continuous operation carried out on the particular operation switch and previous switch information transmitted in the operation previously carried out on any of the operation switches or switch information included in the previous operation information be transmitted as the operation information from the transmitting apparatus till an end of the operation carried out this time on the particular operation switch after the operation determination means determines that the predetermined period of time has not lapsed since an end of the operation previously carried out on any of the operation switches,

wherein the first transmission control means is constructed to let switch information indicating the type of the particular operation switch operated this time and operation duration information representing the duration of a continuous operation carried out on the particular operation switch be transmitted as the operation information from the transmitting apparatus if the operation determination means determines that the predetermined period of time has lapsed since the end of the operation previously carried out on any of the operation switches.

10. A receiving apparatus mounted on a vehicle as an apparatus used in a remote control of the vehicle, the receiving apparatus comprising:

a reception means for carrying out an operation to receive operation information transmitted by a transmitting apparatus for remotely controlling components employed in the vehicle;

an output means for outputting operation information received by the reception means to a control apparatus employed in the vehicle as a command for use in the remote control of the vehicle;

a reception determination means for determining whether a predetermined period of time has lapsed since an end of a previous operation carried out by the reception means to receive operation information after a current operation carried out by the reception means to receive operation

information is started;

a first output control means for controlling the output means to output operation information received by the reception means in the current operation as the command till an end of the current operation after the reception determination determines that the predetermined period of time has lapsed since the end of the previous operation; and

a second output control means for controlling the output means to output operation information received by the reception means in the current operation and operation information received by the reception means in the previous operation as the command till an end of the current operation after the reception determination determines that the predetermined period of time has not lapsed since the end of the previous operation.

11. A receiving apparatus mounted on a vehicle as an apparatus used in a remote control of the vehicle, the receiving apparatus comprising:

a reception means for carrying out an operation to receive operation information transmitted by a transmitting apparatus for remotely controlling components employed in the vehicle;

an output means for outputting operation information received by the reception means to a control apparatus employed in the vehicle as a command for use in the remote control of the vehicle; and

a first output control means for controlling the output means to output operation information received by the reception means in a reception operation and reception duration information representing a reception duration of operation information in a period of the reception operation as the command till an end of the reception operation after the reception operation is started.

12. A receiving apparatus as in claim 11, further comprising:

a reception determination means for determining whether a predetermined period of time has lapsed since an end of a previous operation carried out by the reception means to receive operation information after a current operation carried out by the reception means to receive operation information is started; and

a second output control means for controlling the output means to output operation information received by the reception means in the current operation, reception duration information representing a reception duration of operation information in a period of the current operation and operation information received by the reception means in the previous operation as the command till an end of the current operation after the reception determination determines that the predetermined period of time has not lapsed since the end of the previous operation,

wherein the first output control means is constructed

to control the output means to output operation information received in the current operation and the reception duration information as the command if the reception determination determines that the predetermined period of time has lapsed since the end of the previous operation.